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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/806,576	04/02/2001	David Dalby	36-1417	2802
7590		11/18/2004	EXAMINER	
Nixon & Vanderhye		JUNG, MIN		
1100 North Glebe Road 8th Floor		ART UNIT		
Arlington, VA 22201-4714		PAPER NUMBER		
		2663		

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/806,576	<b>Applicant(s)</b> DALBY ET AL. 	
	<b>Examiner</b> Min Jung	<b>Art Unit</b> 2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8 is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the last line, it is not clear how the phrase "in use" fits in with the rest of the recitation. Further, it is not clear what is meant/intended by the phrase.

In claim 3, it is not clear what is meant by "the packetizing means are arranged to generate one or more further sequences of packets for use in conveying data sequence numbers assigned by the packet numbering means". Does it mean that there are additional sequences of packets for conveying sequence numbers? It doesn't seem to make sense. Note that claim 1 recites (implies) a multiple sequences of packets.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 4, 5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paul et al., US 6,148,005 (Paul).

Paul discloses a layered video multicast transmission system with retransmission-based error recovery.

Regarding claims 1 and 5, Paul specifically teaches a data input for receiving data frames encoded by a layered encoding algorithm (substreams 116a,b,c, of layered video corresponding to MPEG-2 encoded I, P, and B video, col. 3, line 67 – col. 4, line 3); dividing the frames into packets (transport protocol puts the data into packets for transporting them over the multicast IP network, col. 5, lines 8-11); assigning a data sequence number to each packet generated, the data sequence number assigned to a packet being indicative of the order of receipt, at the data input, of encoded data inserted within the packet (Paul teaches that the correct order of the frames is obtained through a sequencer inside the multiplexer/demultiplexer module, col. 6, lines 39-43); and network interface to transmit packets so created (Although network interface is not specifically shown in Paul, it is inherent that an interface should be there for packet to be transmitted to a network properly. Note that the packet streams so created by the transport protocol are sent to the network 150 as shown in Fig. 1).

Paul fails to specifically teach packetizing means and packet numbering means per se. However, Paul teaches the necessary packetizing function as described at col. 5, lines 8-11, and a sequencer inside the multiplexer/demultiplexer module to insure correct order of the frames. See col. 6, lines 39-43. It seems that Paul is implying that this sequencer assigns sequence number for the packets generated (as well as for

frames). If not, then, there should be a related sequencing function integrated into the transport protocol function because in order to recover/retransmit a lost packet, a packet sequence number should be used. Paul teaches the process to recover lost packet at the transport protocol function layer. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to make the system of Paul by specifically including packetizing means and packet numbering means in the layered video multicasting system of Paul to implement the packetizing function and the packet numbering function taught by Paul.

Claim 3, with the question of indefiniteness, is interpreted as meaning an additional sequence of packets being generated. Additional sequence of packets are taught by Paul in his teaching of I, P, and B substreams.

The steps of claim 5 loosely correspond to the functions of the means recited in claim 1. Claim 5 further recites a step of writing the data sequence number at a predetermined position within the packet. It is a common practice to write the sequence number at a predetermined position within a packet rather than at a random position. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to designate a specific position in the packet for the sequence number to be written.

Regarding claim 7, the packet ordering step is spelled out. Paul lacks a specific teaching of the packet-ordering step to place the received data packets into an order using the data sequence numbers. However, Paul teaches the adaptive playback process which advantageously utilizes packet retransmission when packets are lost.

See col. 6, line 44 – col. 7, line 21. This process requires packet ordering according to packet sequence numbers, as is commonly known in the field of packet communication. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to implement the system of Paul by specifically utilizing a packet ordering step to place received data packets into an output order using the data sequence numbers in order to implement the function of adaptive playback described by Paul.

Regarding claim 4, Paul teaches a network interface (inherent by the teaching of receiving data from a network, see also above reasoning for claim 1); packet receiving means to receive one or more sequences of data packets from the network interface (receiving only the I stream, or a combination of I and P substreams, or a combination of I, P, and B substreams, col. 6, lines 1-7), each data packet having a predetermined packet structure, each of said one or more sequences of data packets conveying a different respective layer of encoded data frames generated by a layered encoding algorithm (again, I, P, and B substreams generated by encoder 111) and each data packet having assigned thereto a data sequence number indicative of the order of output of encoded data, conveyed by the data packet, from the layered encoding algorithm (packet having sequence number is implied by the teaching of lost packet retransmission, col. 6, line 44 – col. 7, line 21); packet ordering means (playback/synchronizer 200); and output means to output packets so ordered (output from the mux 125). Paul lacks a specific teaching of the packet ordering means to place the received data packets into a decoding order using the data sequence numbers. However, Paul teaches the adaptive playback process which advantageously utilizes

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packet retransmission when packets are lost. See col. 6, line 44 – col. 7, line 21. This process requires packet ordering according to packet sequence numbers, as is commonly known in the field of packet communication. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to implement the system of Paul by specifically utilizing a packet ordering means to place received data packets into a decoding order using the data sequence numbers in order to implement the function of adaptive playback described by Paul.

***Allowable Subject Matter***

5. Claim 8 is allowed.
6. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. Claim 2 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
8. The following is a statement of reasons for the indication of allowable subject matter: Prior art fail to teach or fairly suggest assigning a further sequence number to the data packets indicative of the order of transmission of the data packet within the respective sequence of packets, in addition to the sequence number assigned to indicate the order of receipt of encoded data at the data input.

***Conclusion***


9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Dixit patent, the Balazinski patent, and the Bushmitch et al. patent are cited for further reference.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Min Jung whose telephone number is 571-272-3127. The examiner can normally be reached on Monday, Tuesday, and Thursday 8AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 703-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJ  
November 15, 2004

  
Min Jung  
Primary Examiner